CV Date	11/04/2023

Part A. PERSONAL INFORMATION

First Name	Beatriz		
Family Name	Merino Antolín		
Sex	Not Specified	Date of Birth	
ID number Social Security, Passport			
URL Web			
Email Address			
Open Researcher and Contributor ID (ORCID)	0000-0002-4761-3977		

A.1. Current position

Job Title	Postdoctoral researcher UVa (competitive contract)		
Starting date	2022		
Institution	Universidad de Valladolid		
Department / Centre	Bioquímica, biología molecular y fisiología / Instituto de Biología y Genética Molecular		
Country	Spain	Phone Number	(+34) 983184005 - 4005
Keywords	Cell physiology		

A.2. Previous positions (Research Career breaks included)

Period	Job Title / Name of Employer / Country
2019 - 2022	Postdoctoral researcher / Universidad de Valladolid / Spain
2018 - 2019	Postdoctoral Fellow Junta de Castilla y León (FEDER) / Universidad de Valladolid / Spain
2017 - 2018	Maternity Leave / Dirección Provincial. Instituto Nacional de la Seguridad Social / Spain
2017 - 2017	Postdoctoral Junior contract / Instituto de Biología y Genética Molecular / Spain
2011 - 2015	PhD Student / Universidad Miguel Hernández de Elche / Spain

A.3. Education

Degree/Master/PhD	University / Country	Year
PhD in Bioengineering	Universidad Miguel Hernández de Elche / Spain	2015
MS in Research Methodology in Fundamental Biology and Biomedicine.	Universidad de León / Spain	2010
BS in Biology	Universidad de León / Spain	2008

Part B. CV SUMMARY

My scientific interests were focused on understanding the pathophysiology of diabetes, especially the adaptations of pancreatic beta- and alpha-cells and hepatic insulin resistance. As Junior PI, related with our surprising results of the effect of preimplantation factor on beta-cell function, I am interested in delved in the molecular mechanisms underlying metabolic adaptations to pregnancy and gestational diabetes.

Predoctoral stage: 2011-2015, **Instituto de Bioingeniería, Universidad Miguel Hernández de Elche**, Elche. I did my PhD training in the laboratory of Professor Ángel Nadal Navajas, under supervision of Professor Iván Quesada Moll focus on the **morphological and functional adaptations of pancreatic alpha-cells in obesity.** I obtained the cum laude qualification with international mention thanks to my training and experience in international centers with the FPI mobility program in the years 2013, 2014 and 2015 at the Université Libre of Bruxelles (ULB) in Diabetes Unit under supervision of Dr. Decio Eizirik, reference in the study of ER stress in Type

1 Diabetes and CSIC-University of Valladolid under supervision of Dr. Javier García-Sancho, as a complement of the development of her doctoral thesis.

Postdoctoral stage: 2016-nowadays, **Universidad de Valladolid, Valladolid.** In this postdoctoral stage, I am focusing in the study of **physiopathology of endocrine pancreas, insulin resistance and diabetes** in the research group of PIs Dra. Irene Cózar-Castellano and Dr. Germán Perdomo. I have been able to delve into the role of the insulin-degrading enzyme protein in the regulation of the endocrine pancreas and the development of hepatic insulin resistance.

Scientific merits and leadership: I am principal investigator of 1 European project from European Foundation for the Study of Diabetes (EFSD), **1 National project from Spanish Society of Diabetes (SED)** as Junior leader focused on research into the regulation of pancreatic alpha-cells in the etiology of hyperglucagonemia and identification of novel insulin secretagogues, respectively. I have published **15 scientific articles (Q1 journals), 5 reviews and 1 book chapter and 34 conference communications**. I described a novel secretagogue for use in diabetes and this publication, derived of the SED National project results, is already under review in Diabetes, Obesity and Metabolism Journal (**last and corresponding author. DOM-23-0251-OP**).

Contributions to the state-of-the-art: Importantly, during my career, we have described for the first time the regulation of pancreatic alpha-cells in obesity and pre-diabetes, as well as the role of IDE protein in hyperglycagonemia. On the other hand, we have also described for the first time the role of IDE in insulin resistance, not related to insulin clearance. Novel functions of this protein highly related with type 2 diabetes risk. As a Junior leader I described a novel agent for the treatment of type 2 diabetes

Awards and recognitions: I have been recently awarded (May 2021) with the **grant for young researchers in Diabetes of SED (Sociedad Española de Diabetes)**. Furthermore, I have received the **European Rising Star 2020 Award** for young researchers in Diabetes. Awarded by the **EFSD (European Foundation for the Study of Diabetes)** and NovoNordisk. I have been invited to the Rising Star Symposium 2020 by the European association for the Study of Diabetes (EASD) at the Virtual Congress 2020, and subsequently invited to join the EASD Academy committee (2022-Nowadays).

Participation in scientific committees: I am member of **EASD Academy committee**, involved in the development of international mentorship and e-learning programs for young researchers of European Diabetes arena. I am also member of **Work Group of Basic research in Diabetes (SED)**.I am a reviewer of several Q1 scientific journals (Scientific Reports, Nutrients, Frontiers in Physiology..), guest editor of 3 special issues in Nutrients, **evaluator of national** (Junta de Andalucía and SED) **and international scientific projects** (FONCyt).

Scientific societies and professional associations: I'm member of the European Association for the Study of Diabetes, "grupo de investigación reconocida (GIR) Enfermedades Metabólicas y Neurodegeneración de JCyL", "Unidad de Investigación Consolidada" (UIC 224-UVa Biomedicina de JCyl" and "grupo de trabajo de investigación básica of Sociedad Española de Diabetes (SED).

Teaching and supervision experience: I have the accreditation for the figure of "profesor contratado doctor" (Acsucyl and ANECA) and I have carried out the Pedagogical aptitude course (CAP). I have taught undergraduate classes on Medicine and Optical, Master and Doctorate courses (4 courses), tutored **4 curricular external internship programs, co-supervised 1 degree thesis, 3 master's thesis and 1 thesis of PhD (in progress)**.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (nº x / nº y): position / total authors. If applicable, indicate the number of citations

1 **Scientific paper**. Merino B; Casanueva-Alvarez C; Quesada I; et al; Cózar-Castellano I. (1/10). 2022. Insulin-degrading enzyme ablation in pancreatic alpha-cells triggers cell proliferation, hyperplasia and glucagon secretion dysregulation.Diabetologia. Springer. 65-8, pp.1375-1389. https://doi.org/10.1007/s00125-022-05729-y

2 **Scientific paper**. González-Casimiro C; Camara-Torres P; Merino B; Díez-Hermano S; Postigo-Casado T; Leissring MA; Cózar-Castellano I; Perdomo G. (3/8). 2021. Effects of Fasting and Feeding on Transcriptional and Posttranscriptional Regulation of Insulin-Degrading Enzyme in Mice. Cells. MDPI. 9-10, pp.2446. https://doi.org/10.3390/cells10092446

3 **Scientific paper**. Merino B; Fernández-Díaz CM; Parrado-Fernández C; et al; Perdomo G. (1/9). 2020. Hepatic insulin-degrading enzyme regulates glucose and insulin homeostasis in diet-induced obese mice. Metabolism clinical and experimental. ElServier. 113, pp.154352. https://doi.org/10.1016/j.metabol.2020.154352.

4 **Scientific paper**. Fernández-Díaz CM; Merino B; López-Acosta JF.; et al; Cózar-Castellano. (2/10). 2019. Pancreatic beta-cell-specific deletion of insulin-degrading enzyme leads to dysregulated insulin secretion and beta-cell functional immaturity.Am J Physiol Endocrinol Metab. https://doi.org/doi: 10.1152/ajpendo.00040.2019.

5 **Scientific paper**. Villa-Pérez P; Merino B; Fernández-Díaz CM; et al; Perdomo G. (2/12). 2018. Liver-specific ablation of insulin-degrading enzyme causes hepatic insulin resistance and glucose intolerance, without affecting insulin clearance in mice.Metabolism. https://doi.org/doi: 10.1016/j.metabol.2018.08.001.

6 **Scientific paper**. García-Arévalo M; Alonso-Magdalena P; Servitja JM; et al; Nadal A. 2016. Maternal exposure to bisphenol-A during pregnancy increases beta-cell growth during early life in male mice offspring.Endocrinology. Endocrine Society. https://doi.org/doi: 10.1210/en.2016-1390.

7 **Scientific paper**. Vettorazzi JF; Ribeiro RA; Borck PC; et al; Carneiro EM; Merino B. (6/10). 2016. The bile acid TUDCA increases glucose-induced insulin secretion via the cAMP/PKA pathway in the pancreatic beta-cell.Metabolism. 65, pp.54-63. https://doi.org/10.1016/j.metabol.2015.10.021

8 **Scientific paper**. Merino, B.; Quesada, I.; Hernández Cascales, J.(1/3). 2015. Glucagon Increases Beating Rate but Not Contractility in Rat Right Atrium. Comparison with Isoproterenol.PloS One. 10-7, pp.e0132884. ISSN 1932-6203.

9 **Scientific paper**. Merino, B.; Alonso Magdalena, P.; Lluesma, M.; et al; Quesada, I.(1/9). 2015. Pancreatic alpha-cells from female mice undergo morphofunctional changes during compensatory adaptations of the endocrine pancreas to diet-induced obesity.Scientific reports. 5, pp.11622. ISSN 2045-2322.

10 **Scientific paper**. Marroqui, L.; Masini, M.; Merino, B.; et al; Eizirik, DL.(3/10). 2015. Pancreatic alpha-cells are resistant to metabolic stress-induced apoptosis in Type 2 Diabetes.EBioMedicine. 2-5, pp.378-463. ISSN 2352-3964.

11 **Scientific paper**. Rafacho, A.; Gonçalves Neto, LM.; Santos Silva, JC.; et al; Quesada, I.; Merino, B.(5/10). 2014. Pancreatic alpha-cell dysfunction contributes to the disruption of glucose homeostasis and compensatory insulin hypersecretion in glucocorticoid-treated rats.PloS one. 9-4, pp.e93531. ISSN 1932-6203.

12 **Scientific paper**. Gonzalez, A.; Merino, B.; Marroquí, L.; et al; Quesada, I.(2/11). 2013. Insulin hypersecretion in islets from diet-induced hyperinsulinemic obese female mice is associated with several functional adaptations in individual beta-cells.Endocrinology. 154-10, pp.3515-3539. ISSN 1945-7170.

13 **Scientific paper**. Sanz-González A; Cózar-castellano I; Broca C; et al; Merino B* (AC). (10/10). sPIF-mediated activation of IDE improves insulin secretion and glucose tolerance without affecting hepatic insulin clearance in diet-induced obese mice.Diabetes, Obesity and Metabolism. Wiley.

14 **Book chapter**. Merino B; García-Arévalo M. (1/2). 2021. Sexual hormones and diabetes: The impact of estradiol in pancreatic beta-cell. International Review of Cell and Molecular Biology. El Servier. https://doi.org/10.1016/bs.ircmb.2021.02.004.

15 **Review**. Marroquí, L.; Alonso Magdalena, P.; Merino, B.; Fuentes, E.; Nadal, A.; Quesada, I.(3/6). 2014. Nutrient regulation of glucagon secretion: involvement in metabolism and diabetes.Nutrition research reviews. 27-1, pp.48-110. ISSN 1475-2700.

16 **Bibliographic review**. Pablos M; Casanueva-Álvarez E; González Casimiro CM; Merino B; Perdomo G; Cózar-Castellano I. (4/6). 2022. Primary cilia in pancreatic ß-and a-cells: Time to revisit the role of insulin-degrading enzyme. Frontiers Endocrinology. Frontiers. 13. https://doi.org/10.3389/fendo.2022.922825

17 **Bibliographic review**. Leissring MA; González-Casimiro CM; Merino B; Suire CN; Perdomo G. (3/5). 2021. Targeting insulin-degrading enzyme in insulin clearance. International Journal of Molecular Sciences. MDPI. https://doi.org/10.3390/ijms22052235.

18 **Bibliographic review**. González-Casimiro CM; Merino B; Casanueva-Álvarez E; et al; Perdomo G. (2/9). 2021. Modulation of Insulin Sensitivity by Insulin-Degrading Enzyme. Biomedicines. MDPI. 9-86. https://doi.org/10.3390/biomedicines9010086.

19 **Bibliographic review**. Merino B.; Fernández-Díaz CM; Cózar-Castellano I.; Perdomo G. (1/4). 2019. Intestinal Fructose and Glucose Metabolism in Health and Disease.Nutrients. WOS (20) https://doi.org/10.3390/nu12010094.

C.2. Conferences and meetings

1 Casanueva-Álvarez E; Sanz-González A; Merino B; Perdomo G; Cózar-Castellano I. Role of Insulin-Degrading Enzyme (IDE) in the Tubulin–Primary Cilium Axis to Regulate Glucagon Secretion. American Diabetes Association's 83rd Scientific Sessions. American Diabetes Association (ADA). 2023. United States of America. Participatory - oral communication.

2 Sanz-González A; Cózar-Castellano I; Royo M; Torroba T; Perdomo G; Merino B. Nuevas aproximaciones farmacológicas para mejorar la secreción de insulina en diabetes tipo 2. XXXIV Congreso de la Sociedad Española de Diabetes (SED). SOCIEDAD ESPAÑOLA DE DIABETES. 2023. Spain. Participatory - invited/keynote talk.

3 Merino B. New clues to the genesis of hyperglucagonemia: insulin-degrading enzyme. REUNIÓN DE INVESTIGADORES JÓVENES CIBERDEM 2022. CIBER DEL AREA DE DIABETES Y ENFERMEDADES METABOLICAS (CIBERDEM). 2022. Spain. Participatory - invited/keynote talk.

4 Discovering new tarjets in endocrine pancreas development: implication of insulin-.degrading enzyme. EASD annual meeting. European Association for the Study of Diabetes (EASD). 2021. Participatory - invited/keynote talk. Conference.

5 Merino B; Fernández-Díaz CM; Kaestner K; leissring MA; Perdomo G; Cózar-Castellano I. Pancreatic alpha-IDE ablation leads to hyperglucagonemia and impaired glucagon secretion. 55 th Annual Meeting of European Association for the study of Diabetes. EASD. 2019. Spain. 'Participatory - poster. Conference.

C.3. Research projects and contracts

1 **Project**. DISCOVERING NEW TARGETS IN ENDOCRINE PANCREAS DEVELOPMENT: IMPLICATIONS OF INSULIN-DEGRADING ENZYME. EASD Rising Star Symposium and EFSD Rising Star Fellowship Programme (European Foundation for the Study of Diabetes). (European Foundation for the Study of Diabetes). 29/10/2020-29/10/2022. 30.000 €.

2 **Project**. NUEVAS TERAPIAS PARA EL TRATAMIENTO DE LA HIPERGLUCAGONEMIA EN DIABETES MELLITUS. (SOCIEDAD ESPAÑOLA DE DIABETES). 01/07/2021-31/07/2022. 20.000 €.

3 **Project**. ROLE OF INSULIN-DEGRADING ENZYME (IDE) IN HEPATIC INSULIN RESISTANCE. European Fundation for the Study of Diabetes (EFSD). (Universidad de Burgos). 01/09/2019-01/09/2020. 75.000 €.

4 **Project**. PAPEL DE INSULIN DEGRADING ENZYME EN HIPERGLUCAGONEMIA. Ministerio de Ciencia e Innovación. Investigación. (Universidad de Valladolid). 01/01/2016-31/12/2019. 169.400 €. Team member.

5 **Project**. BFU2013-42789, ALTERACIONES EN LA FUNCIÓN DE LA CÉLULA ALFA PANCREÁTICA Y EN LA SECRECIÓN DE GLUCAGÓN: CONTRIBUCIÓN A LA HIPERGLUCEMIA Y A LA DIABETES TIPO 1 Y 2.. Ministerio de Economía. (Universidad Miguel Hernández de Elche). 01/01/2014-31/12/2016. 249.260 €. Team member.